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Brazilian sharpshooters of the genus *Homalodisca* Stål, 1869 (Hemiptera, Cicadellidae): notes, new records, key to species, first description of the male of *H. ignota* Melichar, 1924, and a new Northeastern species

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Abstract

Four species of the sharpshooter genus *Homalodisca* Stål are known to occur in Brazil: *H. ignota* Melichar; *H. ignorata* Melichar; *H. lucernaria* (Linnaeus), a senior synonym of the type-species *Cicada triangularis* Fabricius; and the new species *H. spottii* **sp. nov.** described from Bahia and Sergipe states. *H. spottii* **sp. nov.** is probably involved in the transmission of *Citrus* variegated chlorosis in Northeastern Brazil and is easily distinguished from other *Homalodisca* species by the (1) dark dorsum mottled with yellow; (2) contrasting yellow mesoscutellum; (3) broadly concave female sternite VII; and (4) aedeagal atrium not expanded dorsally and with 2 pairs of straight spiniform processes. Males and the female genitalia of *H. ignota* are described and illustrated for the first time (including an undistorted view of the female sternite VII). A sclerotized female internal sternite VIII in *H. ignota* and *H. spottii* **sp. nov.** is newly recorded for this genus. *Homalodisca* species are newly recorded for following Brazilian states: *H. ignota* from Rio de Janeiro and São Paulo; *H. ignorata* from Minas Gerais, Paraná, Rio de Janeiro, and Santa Catarina; and *H. lucernaria* from Pará and Roraima. A taxonomic key and notes on Brazilian species are also given.

Key words: Auchenorrhyncha, Cicadellinae, Proconiini, new species, taxonomy, *Citrus* variegated chlorosis, vectors

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Resumo

Quatro espécies do gênero *Homalodisca* Stål (Cicadellinae: Proconiini) ocorrem no Brasil: *H. ignota* Melichar; *H. ignorata* Melichar; *H. lucernaria* (Linnaeus), sinônimo sênior da espécie-tipo *Cicada triangularis* Fabricius; e a nova espécie *H. spottii* **sp. nov.** descrita da BA e SE. *H. spottii* **sp. nov.** é possivelmente um vetor do "amarelinho" ou clorose variegada dos citros no Nordeste Brasileiro e pode ser distinguida de outras espécies *Homalodisca* por apresentar: (1) dorso escuro salpicado de pequenas máculas amarelas; (2) mesoescutelo amarelo contrastando com o mesoescuto; (3) esternito feminino VII largamente côncavo; e (4) átrio do edeago não expandido dorsalmente e com dois pares de processos espiniformes retos. Machos e a genitália feminina interna de *H. ignota* são descritos e ilustrados pela primeira vez (incluindo o esternito VII feminino). A presença de um esternito feminino VIII esclerotizado em *H. ignota* e *H. spottii* **sp. nov.** é registrada pela primeira vez para esse gênero. Espécies de *Homalodisca* são registradas pela primeira vez para os seguintes estados brasileiros: *H. ignota* para RJ e SP; *H. ignorata* para MG, PR, RJ e SC; *H. lucernaria* PA e RR. Uma chave taxonômica e notas sobre as espécies brasileiras são dados.

Palavras-chave: Auchenorrhyncha, Cicadellinae, Proconiini, espécies novas, taxonomia, clorose variegada dos citros, vetores

Introduction

Stål (1869) described *Homalodisca* based on two previously described species, *Cicada triquetra* Fabricius, 1803, subsequently designated by Distant (1908) as the type-species, and *C. triangularis* Fabricius, 1803. Although Stål (1869) was studying the type-specimens in the Fabrician collection, he managed to swap the descriptions of these two species, in fact misidentifying the type-species of *Homalodisca*. To correct this error in accordance with the ICZN, Takiya *et al.* (2006) fixed the type-species of this genus as *Cicada triangularis* Fabricius (a junior synonym of *H. lucernaria* [Linnaeus]) and validated the name *H. vitripennis* (Germar, 1821) for the glassy-winged sharpshooter. Most species included in *Homalodisca* by Young (1968) occur in Central and North America, but the genus is widely distributed throughout the Americas. Furthermore, *H. vitripennis*, native to southeastern North America, recently has been introduced in some Pacific islands (reported as *H. coagulata* from Tahiti in 1999, Moorea in 2002, and Hawaii in 2004; Heu *et al*. 2004; Sorensen & Gill 1996). Of the 17 valid *Homalodisca* species, only three were known to occur in Brazil: *H. ignorata* Melichar, 1924; *H. ignota* Melichar, 1924; and *H. lucernaria* (Linnaeus, 1758). A fourth species formerly in *Homalodisca*, *H. triquetra* Fabricius, was transferred to *Propetes* Walker by Takiya *et al.* (2006), who also determined that a fifth species described from Brazil, *H. vitripennis*, had its origin mislabeled.

Study of specimens from *Citrus* orchards in Bahia and Sergipe states (Brazil) resulted in the discovery of a species of *Homalodisca* that differs in external and genitalic

morphology from all other *Homalodisca* species described. The new species, *H. spottii* sp. nov., is herein described and illustrated and may transmit the bacterium *Xylella fastidiosa* strain that causes the citrus variegated chlorosis (CVC) in Northeastern Brazil. Species of *Homalodisca* have been reported as major vectors of this bacterium to several economically important crops (Redak *et al*. 2004). In Southeastern Brazil, *H. ignorata* transmits *X. fastidiosa* to *Citrus* (Yamamoto *et al*. 2002) and coffee, causing coffee leaf scorch (Marucci *et al.* 2001).

After studying the female lectotype of *Homalodisca ignota*—the only previously known specimen—conspecific male and female specimens were found at the collection of the Museu Nacional (Rio de Janeiro, Brazil). *H. ignota* is redescribed herein, to include information on the previously unknown male and an illustration of the female sternite VII, which was inaccurately depicted previously by Young (1968).

Nielson (1965) stated that in *Homalodisca* the female internal sternite VIII is not sclerotized, but did not specify which species he studied. Both species described here have a well-developed and at least partially sclerotized internal sclerite VIII. They represent the first record of this structure in *Homalodisca*, although sclerotization of this structure occurs in fairly closely related genera, such as *Propetes* Walker (Takiya *et al*. 1999) and *Dichrophleps* Stål (Mejdalani & Emmrich 1998).

Furthermore, notes and new locality records for other *Homalodisca* species occurring in Brazil, as well as a taxonomic key, are given.

Material and methods

Studied specimens are deposited in the following collections: Coleção de Entomologia Pe. Jesus Santiago Moure, Departamento de Zoologia, Universidade Federal do Paraná, DZUP (Curitiba, Brazil); Museu Nacional, Universidade Federal do Rio de Janeiro, MNRJ (Rio de Janeiro, Brazil); Museu Paraense Emilio Goeldi, MPEG (Belém, Brazil); Coleção Entomológica, Departamento de Biologia, Universidade do Amazonas, DCMB (Manaus, Brazil); Muséum National d´Histoire Naturelle, MNHN (Paris, France); Department of Entomology, Moravian Museum, MMBC (Brno, Czech Republic); Center for Biodiversity, Illinois Natural History Survey, INHS (Champaign, USA); Department of Entomology, North Carolina State University, NCSU (Raleigh, USA); National Museum of Natural History, Smithsonian Institution, USNM (Washington D.C., USA).

In quoting label data of type material, a reverse virgule (\) separates lines on a label. Morphological terminology mainly follows Young (1968, 1977), except for the head, which follows Hamilton (1981) and Mejdalani (1998), leg chaetotaxy which follows Rakitov (1997), and genitalia which follows Nielson (1965). Techniques for preparation of genital structures are those of Oman (1949). The dissected parts are stored in microvials with glycerin.

Key to Brazilian *Homalodisca* species

Acronyms in parentheses refer to Brazilian states from which species are recorded.

1 Crown and pronotum tan to dark-brown not mottled (Fig. 1); mesoscutellum concolorous with mesoscutum (Fig. 1); female hind tibiae with anteroventral (AV) setal row with over 25 modified elongated and curved setae throughout apical 2/3 (Rakitov 2004: Fig. 11K); male pygofer processes long, almost attaining or extending posteriorly beyond apex of pygofer (Fig. 5); aedeagus with single pair of atrial processes (Figs 8, 9: AP); female sternite VII posterior margin not broadly concave (Fig. 10).. 2

- Crown and pronotum dark-brown mottled with yellow (Fig. 3); mesoscutellum bright yellow contrasting with darker mesoscutum (Fig. 3); female hind tibiae with AV setal row with approximately 5 modified elongated and curved setae restricted to apex (Rakitov 2004: Fig. 11L); male pygofer processes very short modified into a dentiform projection (Fig. 16); aedeagus with two pairs of atrial processes (Figs 19, 20); female sternite VII with posterior margin broadly concave (Fig. 21)..... 3

2 Smaller, males 10.5–11.0 mm, females 12.0–13.0 mm; frons with large contrasting black macula ventrally (Marucci *et al*. 2002: Fig. 2B); clavus mostly sclerotized between outer vein and suture; aedeagus without pair of apical processes on shaft (Young 1968: Figs 182f, g) (MG, PR, RJ, RS, SC, SP) ..... *H. ignorata*

- Larger, male 13.5 mm, females 14.0-16.0 mm; frons without large contrasting black macula ventrally (some specimens with frons becoming darker ventrally) (Fig. 2); clavus membranous between outer vein and suture (Fig. 1); aedeagus with pair of laterally directed apical processes on shaft (Fig. 9: SP) (RJ, SP) .....*H. ignota*

3 Aedeagus with atrium expanded dorsally, forming lobe between pair of dorsal atrial processes (Young 1968: Figs 188f, g); ventral pair of atrial processes as long as dorsal pair (except on specimens from Trinidad) (Young 1968: Fig. 188f) (PA, RR) .... *H. lucernaria*

- Aedeagus with atrium not expanded dorsally (Figs 19, 20); ventral pair of atrial processes shorter than dorsal pair (Fig. 19) (BA, SE) ..... *H. spottii* **sp. nov.**

Notes and new records for Brazilian *Homalodisca*

Homalodisca ignorata was described from Paraguay and recorded as associated with *Citrus* orchards in Southern and Southeastern Brazil (São Paulo and Rio Grande do Sul states) (Marucci *et al.* 2002; Azevedo Filho & Carvalho 2004). Surprisingly, this species was not found associated with *Citrus sinensis* (L.) Osb. in northeastern Argentina (Misiones Province) (Remes-Lenicov 1999). This species is newly recorded from Minas Gerais, Paraná, Rio de Janeiro, and Santa Catarina states.

Homalodisca lucernaria is the most common species in the Brazilian Amazonia. It is widely distributed in northern South America (Colombia, French Guiana, Guyana,

Suriname, and Venezuela) including Brazil (Young 1968). Here this species is newly recorded from Tobago island and the Brazilian states Pará and Roraima.

***Homalodisca ignota* Melichar, 1924**
Figs 1, 2, 5–15

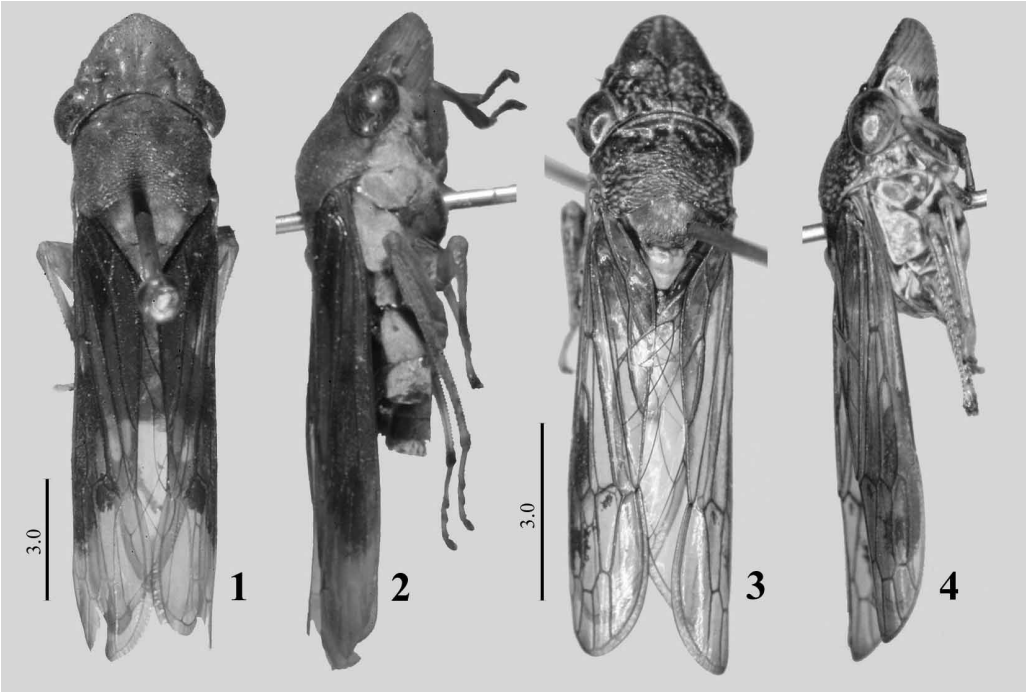
Type locality. Brazil.
Length. male 13.5 mm; females 14.0–16.0 mm.

Description

External morphology. Crown with median length approximately nine–tenths interocular width and half transocular width; anterior margin rounded in dorsal aspect; transition crown-face slightly angulate and with median longitudinal blunt elevation; disc flattened; median fovea incomplete, becoming broader and shallower anteriorly; pubescence dense; posterior margin with M-shaped elevation. Frontogenal sutures extending onto crown and attaining ocelli. Ocelli located on imaginary line between anterior eye angles; each equidistant from adjacent eye angle and median line of crown. Antennal ledges protuberant in dorsal aspect; dorsally carinate and with anterior margin slightly oblique in lateral view. Frons flattened medially and depressed; median area mostly smooth or slightly striated; muscle impressions distinct; pubescent. Epistomal suture incomplete for short median distance. Clypeus continuing profile of frons; apical margin convex; pubescent. Prothorax with dorsopleural carinae complete. Pronotum narrower than transocular width; lateral margins parallel to slightly divergent anteriorly; median length approximately seven-tenths transhumeral width; disc rugose, punctate, and pubescent; posterior margin broadly concave. Mesothorax with katepisternum enlarged and inflated; scutellum not striate. Forewings hyaline, except for large sclerotized area on costal region covering entirely outer discal, base of inner discal, and apices of all anteapical cells; veins distinct and elevated; anteapical cells closed; with four apical cells, base of third more apical than those of second and fourth; without supernumerary crossveins; claval veins fused at mid-length for distance equal or longer than longer separated branch. Hind wings extending almost as far posteriorly as forewings; vein R_{2+3} incomplete. Hind legs apical femoral setal formula 2:0:0; tibial anteroventral (AD) setal row without intercalary macrosetae; tibial setal row AV in females with over thirty elongate and hook-shaped modified setae throughout most of length; first tarsomere slightly shorter or subequal than combined length of two more distal tarsomeres; with two parallel rows of short setae on plantar surface.

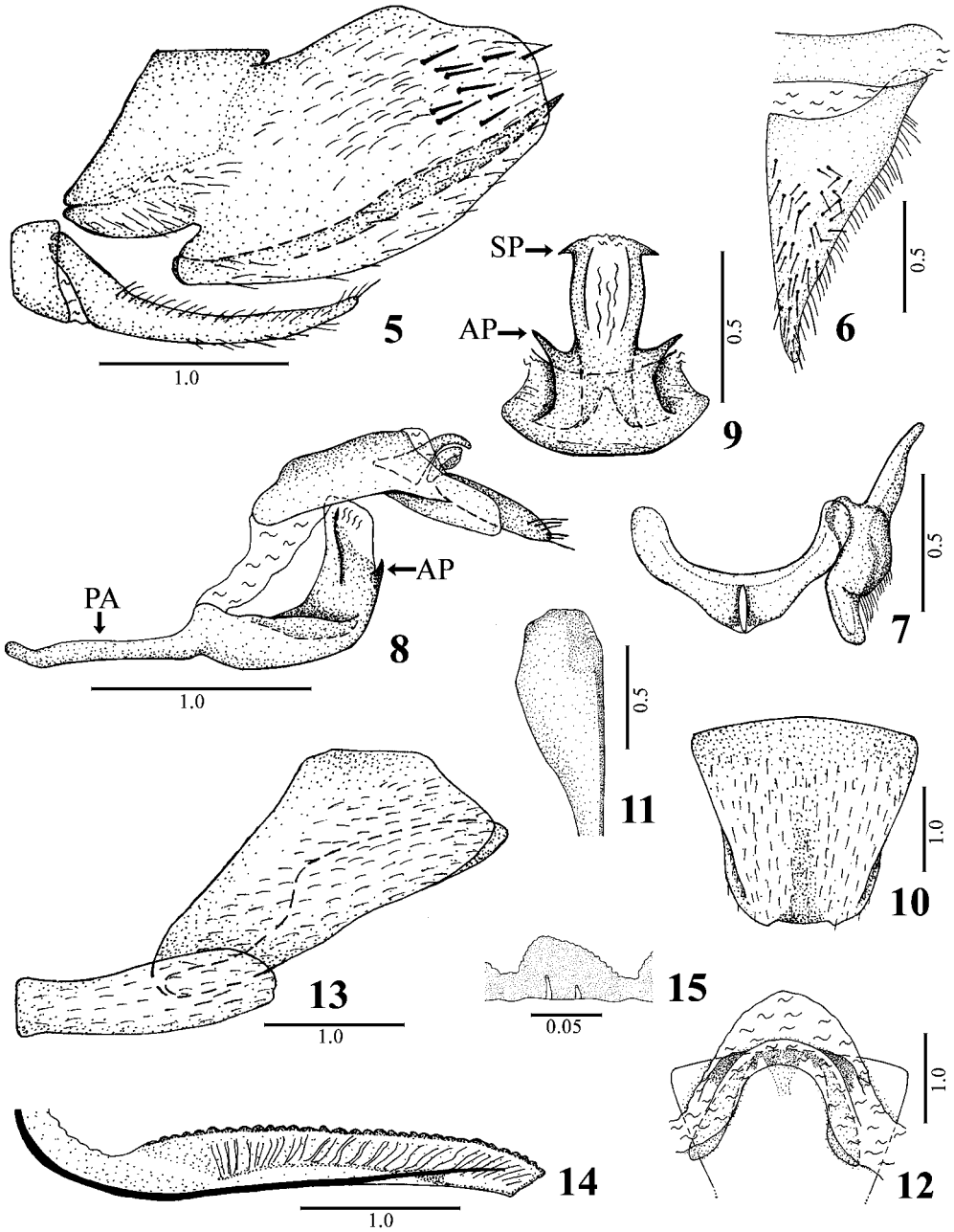
Male genitalia. Pygofer (Fig. 5) moderately elongate; posterior margin broadly round; ventral process well developed, spiniform; microsetae numerous on posterior half; few macrosetae on dorsal portion. Valve (Fig. 6) linear, transverse. Subgenital plates (Figs 5, 6) subtriangular, extending posteriorly as far as mid-length of pygofer; several microsetae distributed throughout disc; apex narrowly rounded. Connective (Fig. 7) approximately U-

shaped, arms widely separated; with short dorsal keel. Styles (Fig. 7) short, extending posteriorly slightly beyond apex of connective; with distinct pre-apical lobe; microsetae present; apex narrowly rounded. Aedeagus (Figs 8, 9) symmetrical; preatrium (Fig. 8: PA) elongate, articulated basally with connective; atrium with basolateral flange and single pair of short spiniform processes directed posterolaterally (Figs 13, 14: AP); apex of shaft with pair of short spiniform processes directed laterally (Fig. 9: SP).



FIGURES 1–4. Dorsal and lateral habitus. 1–2, *Homalodisca ignota* Melichar, female lectotype, MMBC. 3–4, *Homalodisca spottii* **sp. nov.**, male holotype, DZUP. Scale bars in mm.

Female genitalia. Abdominal sternite VII (Fig. 10) with microsetae distributed throughout disc; posterior margin with shallow median concavity. First valvifers longer than tall; few microsetae on posteroventral margin. First valvulae of ovipositor (Fig. 11) with bases broadly round. Internal abdominal sternite VIII (Fig. 12) mostly membranous, forming two main lobes; ventral lobe in lectotype (Fig. 12), in dorsal view, more anteriorly produced than in other specimens, in which it is positioned just below dorsal fold; dorsal fold with pair of conspicuous sclerotized lateral regions over bases of first valvifers. Pygofer (Fig. 13) in lateral view moderately produced; microsetae distributed throughout disc; posterior margin narrowly round. Second valvulae of ovipositor (Fig. 14) regularly broadened beyond basal curvature throughout apical four-fifths; blade bearing approximately 31 continuous teeth; each tooth (Fig. 15) subtriangular, declivous posteriorly, with denticles throughout entire dorsal margin; preapical ventral prominence present; apical portion with denticles on dorsal and ventral margins; apex narrowly obliquely truncate.



FIGURES 5–15. *Homalodisca ignota* Melichar, genital structures. 5–9, Male genitalia: (5) pygofer, valve, and subgenital plate, lateral view; (6) valve and subgenital plate, ventral view; (7) connective and style, dorsal view; (8) aedeagus and anal tube, lateral view; (9) aedeagus, caudal view. 10–15, Female genitalia: (10) sternite VII, ventral view; (11) base of first valvula of ovipositor, ventral view; (12) base of sternite VII and internal sternite VIII, dorsal view; (13) sternite VII, gonoplac, and pygofer, lateral view; (14) second valvula of ovipositor, lateral view; (15) tooth of median portion of second valvula of ovipositor, lateral view. Scale bars in mm. AP=aedeagal atrium process, PA=aedeagal preatrium, and SP=aedeagal shaft process.

Coloration. Head, thorax, and legs tan (lectotype) to dark brown; mesokatepisternum dark brown to black (Figs 1, 2). Forewings (Figs 1, 2) sclerotized areas and venation purplish red (lectotype) or dark brown. Abdomen tan to dark brown; dorsal median region black; sternites with dark brown to black transverse band basally.

Material examined

Lectotype: ♀, "Brésil", "Collectio \ Dr. L. Melichar \ Moravské museum Brno", "ignotus M. \ det. Melichar", "type", "Lectotype \ Homalodisca \ ignota \ Melichar \ Young & Lauterer", "Invent \ 2992/Ent. \ Mor. Museum, Brno", MMBC. **Additional material:** BRAZIL, RIO DE JANEIRO: ♂, Petrópolis, XI.1940, Parko, MNRJ; ♀, Rio de Janeiro, Jacarepaguá, 12.XI.1952, N. Santos, MNRJ; ♀, Rio de Janeiro, Parque Nacional da Tijuca, III.1951, C. Seabra, MNRJ; SÃO PAULO: ♀, Ubatuba, Parque Estadual da Serra do mar, Núcleo Picinguaba, Equipe Laboratório de Entomologia da UFRJ, 4-7.XII.2002, MNRJ.

Taxonomic notes

The lectotype of *H. ignota* was designated by Young & Lauterer (1966) and the female sternite VII illustrated in Young (1968). Although the unprepared female sternite VII of this specimen is slightly distorted, it was indicated to be strongly distorted by Young (1968: Fig. 189i). After preparation using KOH, the female sternite became completely symmetrical as is herein illustrated (Fig. 10).

Homalodisca ignota may be mistakenly keyed out to either *Dichrophleps* or *Pseudophera* Melichar in Young´s (1968) key to Proconiini genera because its claval veins are fused for a much longer distance than in most other *Homalodisca* and females can measure up to 16 mm.

Homalodisca ignota is apparently more closely related to *H. ignorata*, *H. apicalis* Schmidt, and *H. nitida* (Signoret). Although specimens of the last species were not studied here, this species is possibly conspecific with *H. apicalis* (Young 1968). These species share with related genera (e.g., *Dichrophleps*, *Propetes*, and *Pseudophera*) the plesiomorphic hind leg setal row AV with modified elongate and hook-shaped setae along most of apical half of tibiae and the ventral pygofer processes spiniform and elongate (Fig. 5). In most other *Homalodisca* species (e.g., *H. spottii* **sp. nov.**), row AV is only modified apically (having up to about 6 setae) and the ventral pygofer process is reduced to a dentiform projection (Fig. 16). *H. ignota* can be easily distinguished from other *Homalodisca* species by its aedeagal morphology, being the only *Homalodisca* species with processes on the apical portion of the shaft (Fig. 9: SP).

This species was described from Brazil without further specification of its distribution. Herein it is first recorded from Rio de Janeiro and São Paulo states, in areas dominated by Atlantic Rainforest.

***Homalodisca spottii* Takiya, Cavichioli et McKamey, sp. nov.**
Figs 3, 4, 16–27

Type-locality. Rio Real, Bahia State, Brazil.
Length. males 10.8–11.4 mm; females 12.0–12.3 mm.

Description

External morphology. Crown with median length approximately equal to interocular width and half transocular width; anterior margin rounded in dorsal aspect; transition crown-face slightly angulate and with median longitudinal blunt elevation; disc flattened; median fovea incomplete, becoming broader and shallower anteriorly; pubescence scarce; posterior margin with M-shaped elevation. Frontogenal sutures extending onto crown and attaining ocelli. Ocelli located on imaginary line between anterior eye angles; each equidistant from adjacent eye angle and median line of crown. Antennal ledges protuberant in dorsal aspect; dorsally carinate and with anterior margin slightly oblique in lateral view. Frons flattened medially and depressed; median area mostly smooth or slightly striated; muscle impressions distinct; pubescent. Epistomal suture incomplete for short median distance. Clypeus continuing profile of frons; apical margin convex; pubescent. Prothorax with dorsopleural carinae complete. Pronotum narrower than transocular width; lateral margins parallel to slightly divergent anteriorly; median length approximately three-fifths transhumeral width; disc rugose, punctate, and pubescent; posterior margin broadly concave. Mesothorax with katepisternum enlarged and inflated; scutellum not striate. Forewings hyaline, except for small sclerotized area on costal region covering apex of outer discal and base of outer anteapical cells; veins distinct and elevated; anteapical cells closed; with four apical cells, base of third more apical than those of second or fourth; without supernumerary crossveins; claval veins fused at mid-length for distance shorter than longest free branch. Hind wings extending almost as far posteriorly as forewings; vein R_{2+3} incomplete. Hind legs apical femoral setal formula 2:0:0; tibial setal row AD without intercalary macrosetae; tibial setal row AV in females with only five elongate and curved setae apically; first tarsomere slightly shorter or subequal than combined length of two more distal tarsomeres and with two parallel rows of short setae on plantar surface.

Male genitalia. Pygofer (Fig. 16) short; posterior margin obliquely truncate, slightly concave dorsally and convex ventrally; ventral process poorly developed; microsetae numerous along posterior and ventral margins. Valve (Fig. 17) linear, transverse. Subgenital plates (Figs 16, 17) subtriangular, extending posteriorly almost as far as pygofer apex; microsetae distributed throughout disc; apex narrowly round. Connective (Fig. 18) T-shaped, dorsal keel present. Styles (Fig. 18) elongate, extending posteriorly beyond apex of connective; preapical lobe not strongly developed; apex narrowly round. Aedeagus (Figs 19, 20) symmetrical; preatrium (Fig. 19: PA) elongate, articulating basally with connective; atrium with dorsal and ventral pair of elongate spiniform processes

directed posterolaterally (Figs 19, 20: AP), dorsal pair longer than ventral one; apex of shaft without processes.

Female genitalia. Abdominal sternite VII (Fig. 21) with microsetae distributed throughout disc; posterior margin with broad median concavity. First valvifers (Fig. 22) taller than long; microsetae along posterior margin. First valvulae of ovipositor (Fig. 21) with bases broadly round. Internal abdominal sternite VIII (Fig. 23) well developed and mostly sclerotized. Pygofer (Fig. 24) in lateral view moderately produced; microsetae distributed along posteroventral margin; posterior margin round. Second valvulae of ovipositor (Fig. 25) regularly broadened beyond basal curvature throughout apical three-fourths; blade bearing approximately 50 individual teeth; each tooth (Fig. 26) subrectangular with denticles on anterior and posterior margins; preapical ventral prominence present (Fig. 27); apical portion (Fig. 27) with denticles on dorsal and ventral margins; apex (Fig. 27) broadly round.

Coloration. Crown, pronotum, and mesoscutum dark brown, mottled with yellow spots (Figs 3, 4). Face yellow; frons with two pairs of small maculae ventrally and transverse complete or incomplete band over epistomal suture, black. Mesoscutellum yellow. Forewings (Figs 3, 4) hyaline; sclerotized areas and venation purplish red or dark brown (holotype). Thoracic pleura and sterna mostly yellow with several irregular dark brown to black markings. Abdomen yellow with irregular dark brown markings; dorsal median region black; sternites with dark brown median transverse band basally.

Material examined

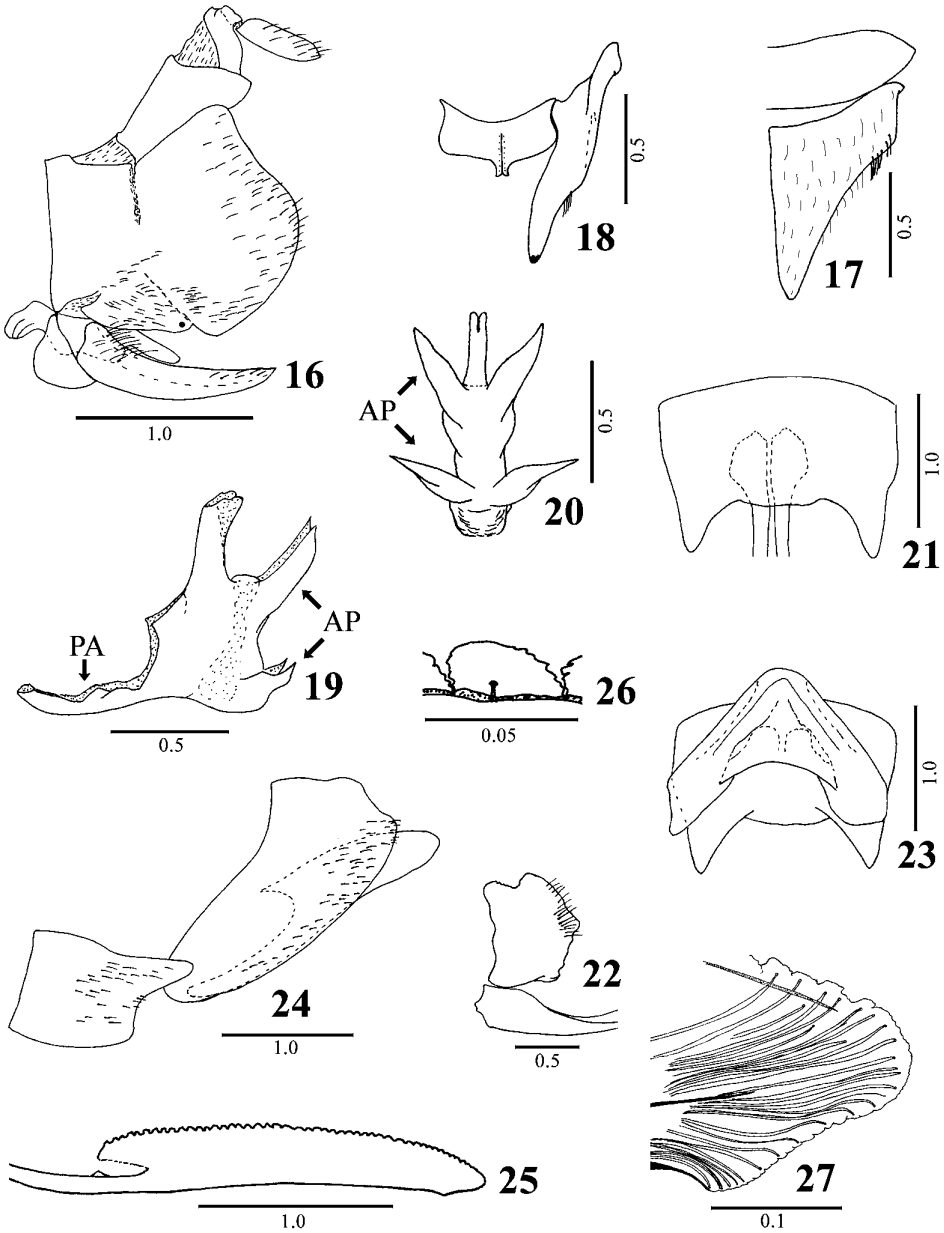
Holotype: ♂, "Rio Real, Bahia \ Brasil 19/III/2003 \ Citros \ Miranda, M. P. leg", DZUP. **Paratypes:** 3 ♂♂ and 3 ♀♀, same data as holotype, DZUP; ♂ and ♀, same data as holotype, USNM; ♂ and ♀, "Sergipe \ Brasil 14/II/2000 \ Citros \ Miranda, M. P. leg", DZUP.

Etymology

This species is named after Dr. João R. Spotti Lopes (Escola Superior de Agricultura "Luiz de Queiroz," Universidade de São Paulo, Brazil) for his contributions on Brazilian leafhopper ecology, vector biology, and pest management.

Taxonomic notes

Homalodisca spottii **sp. nov.** appears most closely related to *H. lucernaria*, sharing with the latter the mottled crown and contrasting yellow mesoscutellum (Fig. 3, also present in other South and Central American species) and the broadly rounded concavity of the posterior margin of the female sternite VII (Fig. 21). The new species can be distinguished from *H. lucernaria* and other species of the genus by the combination of characters mentioned above and by the aedeagus atrium not expanded dorsally (i.e., not forming a lobe between dorsal processes) and having two pairs of straight spiniform atrial processes.



FIGURES 16–27. *Homalodisca spottii* **sp. nov.**, genital structures. 16–20, Male genitalia: (16) pygofer, valve, subgenital plate, style, and anal tube, lateral view; (17) valve and subgenital plate, ventral view; (18) connective and style, dorsal view; (19) aedeagus, lateral view; (20) aedeagus, caudal view. 21–27, Female genitalia: (21) sternite VII (setae not illustrated) and bases of first valvulae of ovipositor, ventral view; (22) first valvifer and base of first valvulae of ovipositor, lateral view; (23) sternite VII and internal sternite VIII, dorsal view; (24) sternite VII, pygofer, and gonoplac, lateral view; (25) second valvula of ovipositor, lateral view; (26) tooth of median portion of second valvula of ovipositor, lateral view; (27) apex of second valvula of ovipositor, lateral view. Scale bars in mm. AP=aedeagal atrium processes and PA=aedeagal preatrium.

Additional material studied

Homalodisca apicalis Schmidt, 1928. COSTA RICA, SAN JOSÉ: 2 ♂♂ and 2 ♀♀, San José, 08.VIII.1932, C. H. Ballou, NCSU.

Homalodisca ignorata. PARAGUAY: ♀ lectotype, "Museum Paris \ Paraguay \ Paraguay Jaguaron \ Santa-Clara \ Cosset 1900", "Collectio \ Dr. L. Melichar \ Moravské museum Brno", "ignorata; det. Melichar", "Typus", "Lectotypus \ Homalodisca \ ignorata \ Melichar \ Young & Lauterer", "Invent. c. \ 2993/Ent. \ Mor. Museum, Brno", MMBC. Additional material. BRAZIL, MINAS GERAIS: ♂ and ♀, Cafelândia, IV.1997, Fundecitrus, DZUP; ♀, Comendador Gomes, III.1997, Fundecitrus, DZUP; PARANÁ: ♀, Fênix, Reserva Estadual de Vila Rica, 04.X.1986, Profaupar, DZUP; RIO DE JANEIRO: ♂, Niterói, 19.IV.1987, A. L. Carvalho, MNRJ; ♂, Rio de Janeiro, Botafogo, 13.VI.1994, A. C. J. Carvalho, MNRJ; SÃO PAULO: 2 ♂♂ and 2 ♀♀, Bebedouro, 14.V.1998. S. Roberto, INHS (donated by R. C. Marucci); ♂, Colina, II.1998, A. H. Purcell", INHS (donated by A. H. Purcell); 4 ♀♀, Olimpia, unknown date or collector, DZUP; ♂ and 5 ♀♀, Paulo Faria. 10.VII.1997, P. Yamamoto; ♂, Araraquara, unknown date, Fundecitrus, DZUP; SANTA CATARINA: ♂, Chapecó, 18.XI.2003, Z. Meneguzzi, DZUP.

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